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| 09/466,521      | 12/17/1999  | DARRYL GAMEL         | 96794DIV1           | 1283             |

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EXAMINER

CHANG, RICK KILTAE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3729

DATE MAILED: 01/09/2002

20

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/466,521

Applicant(s)

GAMEL ET AL.

Examiner

Rick K. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 October 2001.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 30-37, 44-52, 61-69, 72, 73 and 76 is/are pending in the application.
- 4a) Of the above claim(s) 45-47, 52, 63, 65, 66, 68 and 69 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-37, 44, 48-51, 61, 62, 64, 67, 72 and 76 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Receipt is acknowledged of an amendment filed October 24, 2001. This amendment has been entered.

#### *Election/Restrictions*

1. This application contains claims 69 and 73 drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

#### *Specification*

2. The following title is suggested: COMPONENT ALIGNMENT APPARATUS.

#### *Claim Objections*

3. Claims are objected to because of the following informalities: claims 30, 44, 61, 64, 72, line 6 and claim 76, line 8: amend "a component" to --the component--; and claims 61, 64 and 72, line 12: delete "detector". Appropriate correction is required.

#### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 30-37, 44, 48-51, 61-62, 64, 67, 72, and 76 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "one of a . . . in the plane" renders the claim vague and indefinite. It is unclear as to whether the phrase "one of" is referring to "a plurality of alignment orientations",

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“a predetermined . . . in a plane” or “another . . . in the plane”. The reader assumes that the applicants intended to claim “a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 90 or 180 degree from the predetermined fiducial alignment orientation in the plane” and rejects the limitation by a prior art accordingly.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 30, 34-37, 44, 48, 51, 61, 64, 67, 72, and 76 are rejected under 35 U.S.C. 102(e) as being anticipated by Kent (US 5,787,577).

Re claims 30, 35, 37, 44, 48, 51, 61, 64, 72, and 76: Kent discloses a pick and place machine (Fig. 1) including a controller (Fig. 2) connected to a movable pick head (110) and a component feed source (106 is tape reels). Kent discloses a receiver (camera 201) is directed toward the feed source (each camera 201 is disposed in each of the nozzles 114 to look down toward feed source 106) and connected to a controller (Fig. 2 shows camera 201 is connected to

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controller 204 via bus 210), wherein the controller contains instructions (the control section 204 controls the part placement machine 102 to perform a comparison procedure) which, when executed by the controller, cause the controller (204) to compare between “nominal” and “actual” patterns of electronic components and provide a control scheme (Fig. 3). Furthermore, Kent discloses that the movable pick head (110) consists of a plurality of mounting nozzles supported to retrieve a plurality of components from the component feed source (106) and place the retrieved components in one of a plurality of alignment orientations including a predetermined fiducial alignment orientation in a plane and another alignment orientation which is 90 or 180 degree from the predetermined fiducial alignment orientation in the plane (col. 3, lines 9-25; as shown in Figs. 4-5, any two edge points represent 90 or 180 degree of the plane view of the component).

**NOTE:** a recitation of the intended use of the claimed invention (for transferring . . . leads protruding therefrom) must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Re claim 34: Kent discloses a plurality of serial feed sources (106).

Re claim 36: Kent discloses that the detector (201) and the pick head (110) are distinct members.

Re claim 67: Kent discloses a component mounting station (104) having access to the moveable pick head (110), wherein the controller (Fig. 2) further contains instructions which,

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when executed, cause the controller to place the component on a substrate (105) in the component mounting station (112).

8. Claims 31-32 and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (US 5,787,577) in view of Janisiewicz et al (US 5,040,291).

Kent disclose substantially all the claimed limitations as shown above.

Kent fails to disclose a plurality of component trays serially disposed along a continuous serial track.

Janisiewicz discloses a plurality of component trays (6) serially disposed along a continuous serial track (4) thereby continuously supplying components to increase production.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kent by providing a plurality of component trays serially disposed along a continuous serial track, as taught by Janisiewicz, for the purpose of continuously supplying components to increase production.

9. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (US 5,787,577)/Janisiewicz et al (US 5,040,291) as applied to claims 30-32 above, and further in view of Fukai et al (US 4,914,809).

Janisiewicz/Kent disclose substantially all the claimed limitations as shown above.

Janisiewicz/Kent discloses a plurality of component trays (6).

Janisiewicz/Kent fail to disclose that the plurality of component trays, disclosed above, contains a recess having an asymmetric shape.

Fukai discloses a recess (13a-13c) having an asymmetric shape (bottom surfaces 15a-15c are slant downwardly as they extend from the right hand ends to the left hand ends of the recess

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13a-13c. Due to this slanted bottom surfaces, the recess 13a-13c are not symmetric about its central axis) thereby readily and inexpensively mounting a plurality of different chip arrangements utilizing known suction head (col. 1, lines 40-45 and 55-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Janisiewicz/Kent by providing a recess having an asymmetric shape, as taught by Fukai, for the purpose of readily and inexpensively mounting a plurality of different chip arrangements utilizing known suction head.

10. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kent (US 5,787,577)/Janisiewicz et al (US 5,040,291) in view of Kou (US 6,027,019).

Janisiewicz/Kent disclose substantially all the claimed limitations as shown above.

Janisiewicz/Kent fail to disclose that the alignment signal output is a warning.

Kou discloses a warning signal is given based on a result of comparison (col. 2, line 10-11) thereby correcting any misalignment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kent/Janisiewicz by providing a warning in the event of a misalignment, as taught by Kou, for the purpose of correcting any misalignment.

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 30-37,44,48-51,61,62,64,67,72 and 76 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

12. Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed

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requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (703) 308-4784. The examiner can normally be reached on 5:30 AM to 1:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3579 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



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A handwritten signature in black ink, appearing to read 'Rick K. Chang', written in a cursive style.

Rick K. Chang  
Examiner  
Art Unit 3729

RC

January 8, 2002